controlling the phase of the demodulation signal further includes referring to one of a plurality of channel specific phase delay values associated with the analog channel by which the method is performed.

42. The method of claim 41, further including the step of interpolating an unknown channel specific phase delay value from one or more known channels specific phase delay values.

43. The method of claim 39, further including:

testing a plurality of versions of each of the time specific phase delay value from the plurality of time specific phase delay values;

discovering a version for each respective time specific phase delay value that results in a match to within predetermined limits of the phases of the demodulation signal and the incoming signal; and

saving the discovered versions as the plurality of time specific phase delay values.

44. The method of claim 34, wherein the sensor panel is a multi touch panel.

45. The method of claim 34, wherein the sensor panel is a proximity sensor panel.

46. The method of claim 34, wherein the controlling the phase of the demodulation signal further comprises:

placing a digital representation of a single wave iteration of the demodulation signal in a shift register, having multiple tap points;

shifting the values within the shift register periodically, so that different values defining a digital representation of a demodulation wave appear at each tap point;

inserting values shifted out of one end of the shift register into the other end of the shift register; and

selecting one of the multiple tap points based on a desired phase of the demodulation signal.

47. A mobile telephone comprising:

a multi touch panel;

a driver circuit for sending a stimulation signal to the multi touch panel;

at least one analog channel for receiving an incoming signal from the multi touch panel, the incoming signal being related to the stimulation signal, the analog channel further comprising a demodulation circuit for generating a demodulation signal and controlling the phase of the demodulation signal so that it matches the phase of the incoming signal.

48. A portable music player comprising:

a multi touch panel;

a driver circuit for sending a stimulation signal to the multi touch panel;

at least one analog channel for receiving an incoming signal from the multi touch panel, the incoming signal being related to the stimulation signal, the analog channel further comprising a demodulation circuit for gen-

erating a demodulation signal and controlling the phase of the demodulation signal so that it matches the phase of the incoming signal.

49. A method for controlling the phase of a demodulation signal comprising:

placing a digital representation of at least part of the demodulation signal in a shift register including a plurality of tap points;

shifting the values within the shift register according to a phase clock, so that different values defining a digital representation of a demodulation wave appear at each tap point;

selecting a tap point as a source of a demodulation wave, the selection being based on a desired phase of the demodulation signal; and

changing the frequency of the clock in order to control the granularity of the digital representation of at least part of the demodulation signal as well as the size of the portion of the demodulation signal whose digital representation is placed in the shift register.

50. A method for initializing a plurality of desired phase delay values in an electronic device featuring a multi touch panel comprising a plurality of rows and a plurality of channels intersecting the rows, a stimulation circuitry for sending a stimulation signal to one or more of the rows, and analog channels for detecting signals from respective channels of the multi-touch panel, the method comprising performing the following steps for each row of the plurality of rows:

sending a stimulation signal to the row;

generating a demodulation signal by each analog channel;

sweeping the phase of each demodulation signal so that demodulation signals of plurality of different phases are generated by each analog channel;

detecting at each analog channel a plurality of results, each result being based on the stimulation signal and the demodulation signal applied at a particular time;

determining at each analog channel the highest result, and the phase of the demodulation signal associated with the highest result; and

saving the determined phase by each analog channel as a desired phase delay value associated with the combination of the row and the respective analog channel,

wherein the method results in plurality of desired phase delay values, which are usable during ordinary operation of the device to control the phase of the demodulation signal for each analog channel.

51. The method of claim 50, further including processing the plurality of desired phase delay values to obtain a decreased number of phase delay values, wherein said processing step is performed once for each initialization.

52. The method of claim 51, wherein the processing includes obtaining a plurality of row specific phase delay values and a plurality of channel specific phase delay values.

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